

Résumé

Tamas Torok

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Education:

- 1982 Ph.D. (*summa cum laude*) in microbiology (advisor: Prof. L. Ferenczy, A. József University, Szeged, Hungary)
Thesis: "Physiological and fine structure studies on the sugar-tolerant yeast *Zygosaccharomyces rouxii*"
- 1984 M.S. in bioengineering (Technical University, Budapest, Hungary)
- 1971 M.S. (with honors) in food microbiology (advisor: Prof. W. Schade, Humboldt University Berlin, Germany)
Thesis: "Comparative study of the cellulolytic activity of several *Trichoderma* spp."
- 1969 B.S. in food science and technology (advisors: Prof. O. Mücke and Prof. W. Schade, Humboldt University Berlin, Germany)
Thesis: "Antimicrobial effect of various disinfectants used in the food industry"

Special short courses:

- 1986 Workshop on "Regulation of Transport Processes and Metabolism in Yeasts", Gulbenkian Institute, Oeiras, Portugal (three weeks)
- 1985 FEBS-Winterschool on yeast genetics, Maria Alm, Austria (one week)
- 1981 UNESCO, UNEP, WFCC, and ICRO sponsored training course on "Running and Management of Culture Collections", Brno, Czechoslovakia (three weeks)
- 1980 Scholarship to the Masaryk University, Brno Czechoslovakia, working on the formation and regeneration of protoplasts from sugar-tolerant yeasts (one month, advisors: Prof. O. Necas, and Dr. A. Svoboda)
- 1975 Scholarship to the Centraalbureau voor Schimmelcultures, Delft, The Netherlands, working on the induction of sporulation in yeasts using chemical mutagenes (four months, advisor: Dr. L. Rodriguez de Miranda)

Research interests

microbial diversity, molecular microbial ecology, microbial physiology
microbial interfacial interactions
genetic networks of microbial cell regulation
culture collection, strain preservation and maintenance

Experience:

Positions held

- 1997 - Staff scientist, Life Science Division, Center for Environmental Biotechnology, Lawrence Berkeley National Laboratory (supervisors: J. C. Hunter-Cevera, A. Kronenberg and T.C. Hazen)
Participated in proposal writing for DOE (EMSP, NABIR, BES, OBER, NN, IPP, USIC), DOD (Army Corps of Engineers), and other agencies (FBI, BMI)
Co-PI of a three-year project at Berkeley Lab that established the capability of polyphasic characterization of microbial communities in damaged and pristine environments
Supported or led a variety of projects ranging
- from fate and transport of DNAPLs in fractured rocks to ancient microorganisms isolated from amber
 - from the use of spore protein signature information for the detection of *Bacillus anthracis* to high throughput screening of plant and microbial extracts for a new class of antibiotics
 - from developing methods for DNA extraction of bacterial endospores, to isolation of unique microorganisms from Lake Baikal and Kamchatka in Russia
- Preserved isolated and obtained microorganisms and maintained the Center's culture collection
Mentored a large number of undergraduate students and exchange faculty (DOE-ERUFL fellows, Berkeley Biotechnology Education Inc. co-op students, UC Berkeley work-study students, Bioremediation Education, Science and Technology program participants)
Did extensive in-house and outside peer-reviewing on environmental biotechnology and microbial physiology related subjects
Invited member of the CBNP working group at LBNL
- 1995 - 1997 Scientist, LSD, LBNL (supervisor: Dr. J. C. Hunter-Cevera)
Co-PI of two projects "Bioavailability and degradation of aliphatic and aromatic hydrocarbons from soil" and "Use of rRNA gene sequencing and signature lipid biomarker analysis to assess and monitor microorganisms in damaged environments"
Co-chaired the LBL's working group on "Biogeochemical dynamics", program element #4 of DOE's 10-year Natural and Accelerated Bioremediation Research (NABIR) program
Participated intensively in proposal writing for a variety of funding agencies
- 1993 - 1995 Senior research associate, LSD, LBNL (supervisor: R. Mortimer)
Provided all projects with media
Assisted in developing more selective media for wild-type *Saccharomyces* spp.
Applied molecular biology methods (PCR-based screening and electrophoretic karyotyping) to isolate wild-type *Saccharomyces* spp. whose frequency is less than 0.1% of any given yeast population in their natural habitats
Used large numbers of wild-type isolates to test their phenotype and the segregation of their genetic traits
Preserved and maintained isolates in the collection of the Yeast Genetic Stock Center
Studied the segregation of chromosomal length polymorphism in monosporic clones of yeasts

- Designed taxonomic studies within the highly controversial yeast group *Saccharomyces* sensu stricto, including PCR screening, electrophoretic karyotyping of parental diploids and their monosporic clones, spore-to-spore crosses, etc.
- 1992 - 1993 Senior research associate, LSD, LBNL (supervisor: J. F. Cheng)
 Participated in mapping chromosome 21
 Screened cosmid and YAC libraries
 Responsible for building a high resolution P1 bacteriophage map using inter-*Alu*-products from a minimal set of overlapping YAC contig
 Generated new STSS, and sequenced in the Down's syndrome region of chromosome 21
- 1988 - 1992 Visiting scientist, USDA Western Regional Research Center, Albany, CA (supervisor: A. D. King)
 Participated in various research projects targeting partially processed fruits and vegetables, and isolated and identified the yeast biota
 Investigated the heat tolerance of yeasts and fungi
 Designed a molecular biology method to differentiate among wheat contaminating *Tilletia* spp. accomplished by sequencing ITSs between 18S and 5.8S rDNA, and finding early RNA messages in germinating teliospores, respectively.
 Studied the electrophoretic karyotypes and DNA-DNA hybridization in yeasts and developed a technique of using isolated intact whole chromosomes for probing yeasts and other lower eukaryotes (US patent granted in 1994)
- 1974 - 1988 Senior staff scientist, Department of Microbiology, University of Horticulture and Food Sciences, Budapest, Hungary (supervisor: T. Deak)
 Lectured in general and food microbiology
 Taught graduate students in biotechnology, yeast physiology, electron microscopy, and growth and death kinetics of microorganisms
 Advised undergraduate and graduate students in different research programs, such as yeast biota in the wine industry, malolactic fermentation, immobilization of yeasts, growth and thermal death kinetics of yeasts and molds, identification of yeasts
 Personal research dealt with growth, heat-resistance, fine structure, and other factors involved in sugar-tolerance of yeasts, and with preservation and maintenance of microorganisms
- 1971 - 1974 Microbiologist, Center for Food Control and Analysis, Budapest, Hungary (supervisor: I. Fabri)
 Main assignment was to help establish a network of state laboratories for microbiological examination of foods in Hungary and to contribute to national and international standards.

Administrative positions

- 2000 - Chair, Institutional Biosafety Committee, LBNL
- 1995 - 2000 Associate Administrator, Center for Environmental Biotechnology, LBNL
 Assisted in developing CEB documents, CEB's budget and other documents for the Steering Committee, CEB's web homepage, etc.
 Facilitated multidivisional inter-disciplinary research projects
 Participated in the planning of the renovation and the setup of laboratories for CEB
 Assisted in procurement for and in managing of the core microbiology facility of the Center
- 1996 - 1999 Co-Group Leader, Microbial Genomics, Department for Environmental Biology, LSD, LBNL

- 1986 Acting head, Department of Microbiology, University of Horticulture and Food Sciences, Budapest, Hungary
- 1982 - 1988 Curator, National Collection of Industrial and Agricultural Microorganisms, Budapest, Hungary (an international depositary authority under the Budapest Treaty)

Award and editorial activity

- "Outstanding Performance Award", Lawrence Berkeley National Laboratory (1996)
- Member of the Editorial Board for the Journal of Industrial Microbiology and Biotechnology (1996 - present)
- Member of the DOE Review Panel for the Initiatives for Proliferation Prevention (IPP) program (1998 - present)
- Member of the DOE Review Panel for the Small Business Innovation Research (SBIR) Program (1998 - present)
- *Ad-hoc* review panel member for NIH program on culture collections

Personal:

Memberships: American Society for Microbiology
American Society for Industrial Microbiology and Biotechnology
American Association for the Advancement of Science
US Federation for Culture Collections
Sigma Xi